

WHAT IS CLAIMED IS:

1. An assembly comprising

a substrate,

an integrated circuit device adapted to be electrically and mechanically attached to the substrate,

5 electrically conductive connecting elements between the device and the substrate that electrically connect the device and the substrate, and

at least one adhesive body positioned between the integrated circuit device and the substrate to form a mechanical connection between the circuit device and the substrate,

said at least one adhesive body comprising a non-thermosetting material which,

10 when heated, releases said mechanical connection to allow removal of the circuit device from the substrate.

2. The assembly as set forth in claim 1 wherein said non-thermosetting material comprises a thermoplastic polymer.

3. The assembly as set forth in claim 2 wherein said thermoplastic polymer has a bonding temperature of at least about 100 degrees Celsius.

4. The assembly as set forth in claim 2 wherein said thermoplastic polymer has a bonding temperature of less than about 300 degrees Celsius.

5. The assembly as set forth in claim 1 wherein said at least one adhesive body is positioned at a peripheral edge of the integrated circuit device.

6. The assembly as set forth in claim 5 wherein said circuit device has corners and the adhesive bodies are located at said corners.

7. The assembly as set forth in claim 1 wherein said at least one adhesive body has a substantially spherical shape.

8. The assembly as set forth in claim 1 wherein said at least one adhesive body comprises four adhesive bodies.

9. The assembly as set forth in claim 1 wherein said integrated circuit device is a chip package.

10. The assembly as set forth in claim 1 wherein said integrated circuit device is a multi-chip module.

11. The assembly as set forth in claim 1 wherein said integrated circuit device has a bottom surface with four corners and said at least one adhesive body is located approximately equidistant from adjacent corners in contact with the bottom surface of the circuit device.

12. An assembly comprising
a substrate,
an integrated circuit device adapted to be electrically and mechanically attached to the substrate,

5 electrically conductive connecting elements between the device and the substrate that electrically connect the device and the substrate, and

 at least two adhesive bodies comprising a non-thermosetting material positioned between the integrated circuit device and the substrate to form a releasable mechanical connection between the circuit device and the substrate.

13. The assembly as set forth in claim 12 wherein said releasable mechanical connection is released by heating said adhesive bodies.

14. The assembly as set forth in claim 12 wherein said at least two adhesive bodies are spaced apart to form an open space between the adhesive bodies.

15. The assembly as set forth in claim 12 wherein said at least two adhesive bodies are positioned at a periphery of the integrated circuit device.

16. The assembly as set forth in claim 12 wherein said integrated circuit device has corners and the at least two adhesive bodies comprise four adhesive bodies positioned at said corners.

17. The assembly as set forth in claim 12 wherein said at least two adhesive bodies comprise a thermoplastic polymer.

18. A process for attaching an integrated circuit device to a substrate comprising the steps of:

aligning an integrated circuit device on the substrate;

electrically connecting the circuit device to the substrate;

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positioning at least one adhesive body between the device and the substrate; and
applying heat to the at least one adhesive body so that the body is bonded to the device and the substrate to form a releasable connection therebetween.

19. The process as set forth in claim 18 wherein said positioning step comprises using a jetting mechanism to position the at least one adhesive body between the substrate and the circuit device.

20. The process as set forth in claim 18 wherein said positioning step comprises using a gravity feed mechanism to position the at least one adhesive body between the substrate and the circuit device.

21. The process as set forth in claim 18 wherein said applying heat step comprises applying a localized radiant energy beam to the at least one adhesive body.
22. The process as set forth in claim 18 wherein said applying heat step occurs prior to said positioning step.
23. The process as set forth in claim 18 wherein said applying heat step occurs simultaneous with said positioning step.
24. The process as set forth in claim 18 wherein said at least one adhesive body comprises a thermoplastic polymer.